

NORTH CAROLINA DEPT OF CRIME CONTROL AND PUBLIC SAFETY--ETC F/G 15/3
EMERGENCY PREPAREDNESS EDUCATION PROGRAM FOR PUBLIC SCHOOLS.(U)
DEC 80 M A BUTLER DCPA01-78-C-0159

$$\Delta_{\text{SEC}}^{\text{SEC}} = 1.0$$

END
DATE
FILMED
3-8-11
DTIC

AD A 095731

LEVEL II

7w
(2)

EMERGENCY PREPAREDNESS
EDUCATION PROGRAM for
PUBLIC SCHOOLS
final report

AO 73 787
19

Contract Number DCPA 01-78-C-0159
Work Unit Number 4432-D

Division of Emergency Management
North Carolina Department of
Crime Control & Public Safety



Approved for Public Release
Distribution Unlimited
December 1980

81 3 2 081

EMERGENCY PREPAREDNESS
EDUCATION PROGRAM FOR PUBLIC SCHOOLS

FINAL REPORT

BY

Martha A. Butler

FOR

FEDERAL EMERGENCY MANAGEMENT AGENCY

WASHINGTON, DC 20472

Prepared Under Contract Number DCPA01-78-C-0159

DIVISION OF EMERGENCY MANAGEMENT

NORTH CAROLINA DEPARTMENT OF CRIME CONTROL AND PUBLIC SAFETY

December, 1980

2111

52

Unclas

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A045731	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) EMERGENCY PREPAREDNESS EDUCATION PROGRAM FOR PUBLIC SCHOOLS.		5. TYPE OF REPORT & PERIOD COVERED Final Report 12/77 to 12/80
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Martha A. Butler		8. CONTRACT OR GRANT NUMBER(s) DCPA01-78-C-0159
9. PERFORMING ORGANIZATION NAME AND ADDRESS Division of Emergency Management North Carolina Department of Crime Control & Public Safety, 116 W. Jones Raleigh, NC 27611		10. PROGRAM ELEMENT PROJECT, TASK AREA & WORK UNIT NUMBERS Work Unit # 4432-D
11. CONTROLLING OFFICE NAME AND ADDRESS Federal Emergency Management Agency Washington, D.C. 20472		12. REPORT DATE December 1980
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES Unclassified 1649
		15. SECURITY CLASS. (of this report)
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for Public Release; Distribution Unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary, and identify by block number) Emergency preparedness education, curriculum supplement, grades kindergarten through twelve curricula, teachers' guides, natural and man-made disasters, hazards, protective measures.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The purpose of this project was to develop an emergency preparedness educational program for integration into elementary and secondary school curricula. Designed to supplement existing curricula in grades kindergarten through twelve, this program addressed such areas as: (1) the nature of and protective measures for natural and man-made disasters including nuclear attack; (2) environmental		

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

Unclas

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

problems and emergencies; (3) concepts of disaster preparedness and emergency management; (4) individual responsibilities as a citizen in the community; and (5) public and private organizations involved in emergency preparedness.

The general procedures used in the development of the education program involved the use of experienced teachers. Participating in developmental workshops and testing the materials in their classrooms, the teachers contributed in the preparation of the study guides' goals, performance objectives, and learning experiences.

Based on their classroom use of the materials, teachers indicated that the emergency preparedness program is compatible with K-12 curricula. They also reported that the program was particularly adaptable with the language arts, social studies, science, and healthful living curriculum content areas. Teachers in grades K-6 expressed difficulty in dealing with nuclear disaster instruction, while teachers in grades 7-12 indicated that nuclear instruction was readily integrated into the secondary curriculum content areas.

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A	

Unclass

ACKNOWLEDGEMENTS

David E. Kelly
Assistant Secretary for Public Safety
N. C. Department of Crime Control and Public Safety

Jesse T. Pugh, III
Deputy Director
N. C. Division of Emergency Management

James F. Buffaloe
Assistant Director
N. C. Division of Emergency Management

Special appreciation is expressed to Dollie P. Gaskins and Angelina Damjanovski-Morehead for their assistance and valuable contributions to the project.

The cooperation and efforts of the many North Carolina educators who participated in the development of this program are also gratefully acknowledged.

PREFACE

The purpose of this project was to develop an emergency preparedness educational program for integration into elementary and secondary school curricula.¹ Designed to supplement existing curricula in grades kindergarten through twelve, this program addressed such areas as: (1) the nature of and protective measures for natural and man-made disasters including nuclear attack, (2) environmental problems and emergencies, (3) concepts of disaster preparedness and emergency management, (4) individual responsibilities as a citizen in the community, and (5) public and private organizations involved in emergency preparedness.

The primary objective of this research project was the development of a program for reaching youth, one of the largest segments of our nation's population. At present, instruction in emergency measures and survival techniques is limited in the schools. Hence, upon graduation from high school, these young men and women enter their communities poorly prepared for the reality of life-threatening hazards. What is needed is emergency preparedness education which adequately provides our students the opportunities to learn the knowledge, attitudes, and skills necessary for coping with the world in which they live.

¹ The terms emergency preparedness, civil preparedness, disaster preparedness, emergency management, and civil defense are synonymous as used in this study. The terms imply those measures and actions undertaken by a community and governments at the local, state, and federal levels to prepare for and respond to any type of emergency or disaster, including man-made or natural disaster.

TABLE OF CONTENTS

	<u>Page</u>
Acknowledgements	iv
Preface	v
I. Introduction	1
II. Background and Need for Emergency Preparedness Education .	3
III. Project Research and Development Objectives	7
IV. Considerations for Merging Emergency Preparedness Education in K-12 Curricula	8
V. Project Methods for Educational Program Development . . .	11
VI. Project Results and Findings	16
VII. Conclusions	19
VIII. Diffusion of the Emergency Preparedness Education Program	20
Appendixes	22
A. Program Evaluation Questionnaire	23
B. Sample Activity Sheets	27
Bibliography	32
Disbribution List	41

Detachable Summary

I. INTRODUCTION

Since December, 1977, the North Carolina Division of Emergency Management, supported by a Federal Emergency Management Agency (FEMA) contract, has undertaken the development of an emergency preparedness education program for use in elementary and secondary schools. This program has been developed in cooperation with the North Carolina Department of Public Instruction. It is expected that the program will serve as a prototype for use in public school systems throughout the United States.

The educational delivery system planned for the project included:

(1) development of teachers' guides for grades kindergarten through twelve; (2) design and development of media instructional aids to complement the teachers' guides; (3) writing a comprehensive educator's resource manual covering all facets of disasters and emergency preparedness; (4) development of an instructors' manual for each teacher's guide; (5) development of a teacher's in-service training program; and (6) development of a handbook for local emergency management coordinators in support of this education program in public schools. Designed to supplement public school curricula, the instructional materials are not intended to be used as a separate curriculum. The knowledge, attitudes, and skills needed for dealing with emergencies should be taught throughout the school years as part of the normal or routine course of study and should not be treated as something special or unique.

The general procedures used in the development of the education program involved the use of experienced teachers. Participating in developmental workshops and testing the materials in their classrooms, the teachers contributed in the preparation of the study guides' goals, performance objectives, and learning experiences. Beginning at kindergarten and proceeding through each grade level, the spiraling experience or block-building approach was used to design instructional materials related to each grade level and students' learning capacities. By building from the preceding grade level, this approach provides for the logical flow and sequencing of the emergency preparedness concepts, objectives, and activities from kindergarten through grade twelve. While each grade level

was considered in the developmental process, the teachers' guides were designed to cover a grade span or cluster, thus allowing for flexibility in school unit and classroom programming.

A six-step method was established to develop the instructional guides and materials. These steps included: (1) preparation of a draft framework of learning objectives and activities; (2) selection of teachers to participate in study guide development; (3) conducting a teachers' workshop to develop a draft study guide using the framework developed in step 1; (4) classroom field test of the study guide for one school year; (5) revision of the draft study guide during a second teachers' workshop; and (6) limited expansion of program use, pending completion of the project work.

Based on their classroom use of the materials, teachers indicated that the emergency preparedness program is compatible with K-12 curricula. They also reported that the program was particularly adaptable with the language arts, social studies, science, and healthful living curriculum content areas. Teachers in grades K-6 expressed difficulty in dealing with nuclear disaster instruction, while teachers in grades 7-12 indicated that nuclear instruction was readily integrated into the secondary curriculum content areas.

II. BACKGROUND AND NEED FOR EMERGENCY PREPAREDNESS EDUCATION

Traditionally, emergency preparedness education has been primarily concerned with adult education. The focus of the adult education has been training for effective participation of professionals and citizen volunteers. Emergency preparedness education in the schools, if any, was primarily focused on school emergency plans. In recent years, there has been increasing interest in emergency preparedness instruction throughout the elementary and secondary grade levels.

In school systems throughout the United States, emergency preparedness instruction has had varying degrees of interest and concerns. There have been no national standards or minimum competency goals for emergency instruction. The variations in educational emphasis are reflected in the literature search. A study conducted by the Far West Laboratory for Educational Research and Development supports this view:

... An examination of Civil Defense (CD) education in seven states reveals a kind of 'hodge podge' from which it is difficult to make generalizations, but which does yield some conclusions: In practice, CD education, since it is cross disciplinary, has been fragmented into various subject areas, and receives varying degrees of attention, depending upon the point of view of a teacher or the pressures exerted by an administrator...

... In general, the situation in the schools reflects the fact that only recently has attention been focused on CD education below the adult level.²

During the 1950s and 1960s civil defense education emphasized protection and survival in the event of nuclear attack. Education was viewed as an important element in the civil defense effort:

... Civil Defense education should be part of the experience of every school age person. It prepares the student to survive physical disaster and enables him as a future citizen, to protect himself and others, serve his community, and help strengthen the Nation in time of emergency.³

²C. L. Hutchins, et al., A Study of Alternatives of Disseminating Knowledge and Planning for Civil Defense Education Among School Age Children. (San Francisco: Far West Laboratory for Educational Research and Development, 1972) p. 5.

³U. S. Department of Health, Education, and Welfare, Office of Education. Education for National Survival: A Handbook on Civil Defense for Schools. (1955), p. 42.

In 1955, the U. S. Office of Education provided a curriculum planning guide for the integration of civil defense education into elementary and secondary school curriculum content areas. Although the guide placed primary emphasis on nuclear attack protection, it did include protective measures for natural disasters.

In 1960 the American Association of School Administrators published a handbook identifying twenty-one topics of school subject matter which could relate to protection against nuclear attack. These topics, it was noted, were required instruction in only ten to fifteen percent of the nation's public schools. This handbook recognized the need for emergency preparedness education for all disasters:

...In completing a recent NEA project, personal site-visit interviews were conducted with school administrators throughout the country. One conclusion - expected but nevertheless very important to this publication - pinpointed the area of greatest need for accurate information among our school people. The area is that of student protection under conditions of nuclear disaster...
...It should be understood that the school defense program today includes provision for all kinds of disasters, natural and man-made.⁴

Since 1970, efforts have been made at the national level and by a number of states to develop emergency preparedness curriculum programs for various levels of public school education. Significantly, during the 1970s, the thrust of these efforts has been toward protection and recovery from all natural and man-made disasters. For example, in 1972 the Alabama Department of Education published, The Challenge of Survival, a text for survival instruction on several types of disasters. Some state educational programs provided curriculum designs incorporating learner objectives, learner activities, and suggested resource materials. Examples of these include the Louisiana State Department of Education's Emergency Preparedness Curriculum Guide, for grades K-12, and the Kentucky Department of Education's Disaster Preparedness: An Elementary Curriculum Guide, for grades K-6. While a number of state-developed curriculum guides reflected a significant advancement in

⁴American Association of School Administrators. A Realistic Approach to Civil Defense: A Handbook for School Administrators, (Washington, D.C.: National Education Association, 1966), p. 2.

emergency preparedness educational development, the materials typically emphasized only those disasters potentially dangerous to that state. With these limited approaches, the general application of these curriculum guides in other areas of the nation was not feasible.

Since 1972, the Defense Civil Preparedness Agency (DCPA) has published several curriculum guides providing a more comprehensive approach to emergency preparedness education. In 1972, the Far West Laboratory for Educational Research and Development developed the program Your Chance To Live. Consisting of manuals for teachers and for students, the program provides learning objectives, activities, and evaluation exercises. These materials are accompanied by instructional media aids including films, filmstrips, and audio cassettes. DCPA arranged for the production and general distribution of these materials.

Although the Your Chance To Live program represents a significant advancement in emergency preparedness education, it is limited in design to the junior high level of instruction. It is recognized that an emergency preparedness education program should provide for the building of attitudes and values, along with knowledge and skills, throughout the 13 school years. Few elementary or high school teachers have the time or are willing to take the time to translate and apply grades 7-9 learner objectives and activities to their classroom situations. An approach that considers the entire K-12 curriculum is needed.

Two Defense Civil Preparedness Agency publications do provide instructional materials for use in grades K-12: Government in Emergency (1974) and Games That Teach (1975). While both provide learning objectives and activities for elementary and secondary grade levels, each is limited to the social studies curriculum. The problem of how to reinforce and integrate emergency preparedness instruction into other curriculum content areas remains.

While the need for emergency preparedness instruction is recognized in varying degrees by educators, much of this concern is focused on the problems and solutions of school emergencies. Considerable emphasis is placed on school emergency plans since the safety and protection of students, staff, and facilities are of paramount importance. However, practice drills and testing of school emergency plans do not necessarily prepare students to respond to any disaster in a practical and rational way.

Although the need for emergency preparedness education may be recognized, the inclusion of this instruction in the public school curricula can present a very real problem for the educator. If treated as a separate or unique educational requirement, an emergency preparedness program risks non-acceptance in the face of higher priority curriculum requirements. If, on the other hand, emergency preparedness instruction is an integral part of school curricula and reinforces regular content areas, it may be more readily accepted and used in the classroom.

In summary, while some efforts have been made in recent years in the development of emergency preparedness education, the results do not offer a comprehensive approach for use in education throughout the United States. The problem addressed by this project was the development of a comprehensive educational program which can be integrated into the K-12 school systems throughout the United States. An emergency preparedness educational program should provide flexibility of content to permit optimum utilization in any type K-12 school system.

III. PROJECT RESEARCH AND DEVELOPMENT OBJECTIVES

The purpose of this project was to develop a prototype emergency preparedness education program for use in grades kindergarten through twelve. The project was conducted for the Federal Emergency Management Agency and in consultation with the North Carolina Department of Public Instruction.

As conceived and planned, the education program is appropriate for integrating and supplementing existing curricula in both elementary and secondary grades. The program provides curriculum materials on natural and man-made disasters, nuclear and radiological emergencies, and environmental problems and emergencies.

The scope of the project, as initially planned, was to develop study guides for grades K-12, instructors' manuals, instructional media aids, and an emergency preparedness resource handbook for educators. In addition, development of a teachers' in-service training program and a handbook for local Emergency Management coordinators were proposed as components of this educational delivery system.

Designed to be used in all elementary and secondary grade levels, this education program provides the opportunity for the development of cumulative knowledge relevant to emergency preparedness. Emphasis has been placed on the following:

- 1) The nature of and protective measures necessary to guard against the hazards of natural and man-made disasters, including nuclear and radiological emergencies,
- 2) The purpose and functions of organizations involved in emergency management,
- 3) The individual's role in emergency preparedness,
- 4) The importance of and need for citizen participation in emergency preparedness efforts.

IV. CONSIDERATIONS FOR MERGING EMERGENCY PREPAREDNESS EDUCATION INTO K-12 CURRICULA

All schools may differ in curriculum content, instructional strategies, and administrative organization. There is perhaps no single answer to the question of what schools should teach. The question requires a constant examination in order to meet the needs of social and cultural changes and to insure relevancy. Viewed as being dynamic, curricula is in a state of continuous development and assessment.

Analysis of the innovations and changes made, or in process, suggests certain broad areas of curriculum content that are not in dispute. Rather, what is in contention is the approach to and the rigid standardization of content within these broad areas. Thus, it is reasonable to perceive an emergency preparedness curriculum that spans the entire K-12 continuum and is related to these general areas of content. These curriculum areas, deeply rooted in tradition, provide the framework for the innovations of today and represent a synthesis of the purposes and goals of education. The six broad content areas identified in this concept area:

- 1) Social Studies - including economics, history, government, sociology, human relations, and psychology.
- 2) Language Arts - including languages and all phases and applications of language arts and communications.
- 3) Cultural Arts - including fine arts, performing arts, and avocations.
- 4) Mathematics
- 5) Science
- 6) Health - including personal and community health, physical education, recreation, and safety.

Is it feasible or realistic to expect that emergency preparedness education can be integrated into contemporary K-12 curricula? Analysis of the emergency preparedness concepts, educational implications, and of the K-12 curriculum framework indicates that emergency preparedness education can be readily incorporated into K-12 curricula. In the case of emergency preparedness subject matter, some cogent points are:

- 1) Much of the material is not new to contemporary K-12 curricula, but is simply being given fresh illumination.

- 2) Relating emergency preparedness to the student's own life and future provides personal motivation that enhances interest in the contemporary problems of living.
- 3) The emergency preparedness content can be appropriately included within existing courses and readily reinforces K-12 curriculum content.

Conceptually, a curriculum design for the integration of emergency preparedness instruction into the K-12 course of study must identify the emergency preparedness content areas and relate these to the curriculum framework. In more specific terms, the emergency preparedness learning objectives and experiences must be designed and developed in consonance with the six broad curriculum content areas for grades K-12. With this concept, emergency preparedness curriculum would be introduced throughout the thirteen years of schooling in various curriculum areas. Essentially, this was the approach used in our study and is discussed further in the methods section.

Three possible approaches for development of a K-12 emergency preparedness program were considered:

Alternative 1: To develop a planning guide linking emergency preparedness subject matter to specific K-12 curriculum content areas. This approach would not address the problems of determining program goals, behavioral objectives, or sequence of instruction. It is doubtful that a classroom teacher would have adequate time to research and complete the instructional process. In limiting the program to specific curriculum content areas, this approach would not allow flexibility and a more general application.

Alternative 2: To develop a complete curriculum program providing emergency preparedness learning objectives and experiences. In this approach, emergency preparedness personnel and curriculum specialists would participate in the development of an educational guide specifying the content areas, instructional subjects, and sequences for this program. Although thorough, this alternative would not allow for the differences among individual classrooms and school systems. Since curriculum development is in a continuous process of change, a rigid program of this type would also risk becoming obsolete soon after publication.

Alternative 3: To develop an emergency preparedness educational guide which provides program objectives, learner objectives and experiences and allows for choices in application and sequences. Program development would be accomplished by a group of emergency preparedness specialists and classroom teachers. A significant feature of this approach is the flexibility permitted for school units and teachers in applying program content and sequence to other K-12 subject matter.

This last alternative, a compromise between options one and two, is the approach used in the development efforts for this project.

V. PROJECT METHODS FOR EDUCATIONAL PROGRAM DEVELOPMENT

The theoretical considerations, discussed in the preceding section, provide the conceptual framework used in the project for the development of the K-12 emergency preparedness educational study guides. The project work was accomplished by a research and development staff assigned to the Division of Emergency Management, North Carolina Department of Crime Control and Public Safety. The project contract was administered through the North Carolina State government system and followed both state and federal procedures and guidelines.

The developmental approach perceived for the project called for the assistance of volunteer teachers in developing and field testing the study guides. These developmental steps were followed by limited expansion of use in selected schools. Obviously, acceptance and legitimation of project work by the educational systems and school units were most important. In view of this, the first step taken before initiation of project work was to obtain from the North Carolina Department of Public Instruction (NCDPI) acceptance of and agreement to assist project developmental efforts. The NCDPI is the primary state government department responsible for the administration of North Carolina's elementary and secondary education.

Since the need for emergency preparedness education had already been recognized by some of the department's educators, project acceptance and coordination arrangements were readily obtained from the NCDPI. A steering committee consisting of eight principal staff members from the North Carolina Division of Emergency Management and the NCDPI was established. The purpose of the steering committee was to furnish a program overview and policy guidance for the project. As the primary project contact at the NCDPI, the Director of the Division of Health, Safety and Physical Education advised the project staff and expedited project work to the appropriate NCDPI staff agency.

The general procedures used in the study guide development process involved a cooperative effort of emergency preparedness education specialists and experienced teachers. Beginning at kindergarten grade level, goals, objectives, and activities related to each grade level and to student learning capacities were developed. This approach, by building from the preceding grade level, provided for the logical flow and sequencing of the emergency preparedness educational program from kindergarten through grade twelve.

Although each grade level was considered in the developmental process, the study guides were designed to cover a grade span or cluster. This approach would allow for flexibility in school unit and classroom programming. Initially, study guides for grades K-6, 7-9, and 10-12 were planned. During the developmental work and classroom use, it was determined that the K-6 study guide should be organized into two separate guides, one for grades K-3 and one for grades 4-6.

The design and development of the study guide for each grade cluster involved six major steps.

Step 1: A draft study guide program plan was prepared for use in the initial teachers' workshop. The plan included the proposed program objectives and the general framework for performance objectives, content areas, and activities. Deliberately set in draft form to encourage innovation and change during the workshop, the draft plan was considered as the starting point and not as a fixed direction. Resource materials and on-shelf media were identified for possible workshop and field test use.

Step 2: Schools and teachers, representing a cross-section of regional, cultural, and school organizations in North Carolina, were selected to participate in the project. A true random selection was not possible due to the practical constraints of time, travel distances, and funds. Final selection of teachers and schools was, of course, predicated on gaining their acceptance to participate in the project. In the few instances where agreement could not be obtained from the targeted school, it was possible to locate another school in the same geographical area. Between ten and fifteen schools and teachers were selected for participation in the development of each study guide program. Ideally, this provided for three or four experienced teachers for each grade level.

The identification of master or highly skilled teachers was expedited through discussions with student teaching consultants at state universities. These university representatives, who monitor student teachers' training, assisted in identifying highly qualified or master teachers as well as their grade levels and subject areas.

Prior to discussions with individual teachers, project approval and coordination were established through two existing organizational channels. The first channel involved the public education system in North Carolina.

Project orientation sessions were given to responsible administrators, superintendents, and principals in the targeted school systems. During this time, approval was obtained for school participation in the project. The targeted teachers were then solicited to participate in the developmental workshops and to field test the materials.

Concurrent with the cooperative effort in the public school system, contact was made with the local emergency management coordinator in the county or city where a school had been targeted. Typically, the coordinators have a personal working relationship with the school administrators in their service area. This relationship assisted in the legitimation process.

Step 3: The teacher workshops were conducted during the summer months. The payment of consultant fees and travel expenses were useful incentives for teacher participation. In many cases, the teacher's administrative unit granted certificate renewal credit for participation in the workshop. During the developmental workshops, the initial draft study guides were prepared. Workshop activities included one and one-half days for initiation and organization of work followed by three to eight days for the development of the study guides' learning objectives and activities.

Step 4: The study guides developed at the workshops were then field tested by the participating teachers during the following school year. Project staff members provided supporting consultation and resources to the teachers. Program evaluation data was obtained from the teachers through interviews and written questionnaires. A questionnaire designed for use in the project is shown in Appendix A.

Step 5: A second workshop for teachers was held during the summer following the field test period. The purpose of this workshop was to review and revise the draft materials based on the teachers' evaluations and classroom experiences. In addition, teachers made recommendations for the design and development of instructional media aids.

Step 6: To allow for expanded use and evaluation of the program, additional schools and teachers were sought for participation in the project. Ten to fifteen additional schools were identified by the methods previously discussed. Of necessity, program expansion was limited to that which project funds and project staff could support. By the conclusion of the three year project, sixty primary contact teachers representing forty-four schools in North Carolina had participated in the development of this education program.

FACTORS INFLUENCING PROJECT METHODS AND RESULTS

Prior efforts for the development of emergency preparedness education programs in North Carolina schools significantly influenced the curriculum development methods undertaken during the project's contract period. Procedures for grades K-9 study guide development were established and a considerable amount of task work was initiated before December 19, 1977, the effective contract date.

Initial efforts began in 1971 with discussions between representatives of the Defense Civil Preparedness Agency, the North Carolina Department of Public Instruction, and the North Carolina Division of Civil Preparedness. However, since funds failed to materialize, the program remained dormant until 1974. During the three year period between 1974 and 1977, three successive federal contracts were negotiated providing limited funds for project work. During 1974 and 1975 major emphasis was placed on the development of emergency plans for local school administrative units. In addition, efforts were made to encourage school personnel to develop emergency preparedness instructional programs. However, no specific developmental action was initiated on the emergency preparedness education program for schools.

With limited federal funds available during 1976, developmental work on a program for grades K-6 was initiated. Twenty teachers from public schools in North Carolina assisted in the development of draft study guides for each grade, K-4 and one guide was drafted for the fifth and sixth grades. Also, a teachers' resource manual providing background information on disasters and preparedness was begun.

Although federal funds to support the civil preparedness education program ceased in late 1976, the project continued with limited state funds. The grades K-6 study guides were field tested and evaluated during the 1976-77 school year by the teachers who had participated in the study guide preparation.

During the summer of 1977, 20 teachers who had participated in the grades K-6 development and evaluation assisted in revising the draft study guides. Based on the field test, evaluation, and recommendations of participating teachers, the K-6 study guides was organized into two guides for grades K-3 and 4-6.

Additional project work in 1977 included initial efforts toward development of the educational program for grades 7-9. Nine teachers representing North Carolina junior high schools participated in developing a draft study guide. The draft emergency preparedness education resource manual was also revised to support the grades 7-9 program. The grades 7-9 study guide and the resource manual were field tested and evaluated during the 1977-78 school year. This was accomplished by the teachers who participated in the study guide draft preparation.

In October, 1977, the North Carolina Division of Emergency Management submitted a proposal for a three-year project to complete the development of the educational program for kindergarten through the twelfth grade. It is evident that the developmental methods, which had evolved over a number of years, influenced the methods and results of this project. Essentially, methodology and project procedures were modified and revised through trial and experience.

VI. PROJECT RESULTS AND FINDINGS

The project's objectives and scope, discussed in Section III of this report, specified the tasks for development in this educational program. With the cooperation and assistance of sixty primary contact teachers representing forty-four schools, the project staff has completed the design and development of four curriculum guides and the accompanying media instructional materials. In addition, work has begun on a comprehensive resource manual for teachers. In the original plan, development of a teachers' in-service training program and a local coordinator's handbook were proposed. However, constraints of time and funding have limited the design and development of these components of the emergency preparedness educational delivery system.

STUDY GUIDES FOR KINDERGARTEN THROUGH GRADE 12

After extensive review, evaluations, and revision, four curriculum guides for teachers have been developed for the emergency preparedness education program. The guides are designed to span grade clusters K-3, 4-6, 7-9, and 10-12. Each guide offers learning objectives, a variety of teaching procedures, student-oriented activities, and references.

The learner objectives and activities provide the educational framework for each guide. The objectives specify what the student is expected to be able to do after completion of an instructional topic. With the variety of objectives and activities offered, the teacher can be selective in each area. A flexible instructional guide was considered essential to allow for individual classroom needs and teacher preferences.

The learner objectives and activities are critical to the study guide framework. They must be educationally feasible for each grade level and provide for logical progression within the K-12 program. The major purpose of employing teachers to participate in designing these critical elements was to insure that these criteria were met in the study guides. Further, it was hoped that in the development would result in a realistic and readily acceptable education program. Teachers who were involved in study guide development shared their materials and experiences with other teachers at their schools. The workshop commitments carried over to the school units and aided in the implementation of school programs.

INSTRUCTIONAL MEDIA MATERIALS

Over the three year project, prototype media materials have been designed and developed to supplement the teaching guides. These instructional aids consist of student activity sheets, games, puzzles, vocabulary exercises, maps, posters, and experiments. In addition, research was conducted to identify existing instructional media related to this education program. Films, film-strips, and other media materials were identified and incorporated into the study guides.

Designed to complement the learning objectives and activities in each of the guides, these media materials are, of course, related to the concepts of emergency preparedness, characteristics of natural and man-made disasters, and the protective measures needed for survival and recovery. The design criteria was based on the applicability and relevancy of these aids to the learning objectives and experiences.

The media materials developed for this education program evolved both from the teacher workshops, classroom experiences, and from the designs of project staff members. The activity sheets, as compared to other media, have been particularly popular as a teaching tool and are easily used in the classroom setting. The quantity of activity sheets was determined primarily by the nature of the learning objectives and activities. No attempt was made to set a quota of activity sheets as this was considered an unrealistic approach. There are sufficient activity sheets to allow for teacher selection preferences.

It is not possible to include in this report a description of all the media aids developed for this program. Therefore, four examples, one from each grade cluster, are included in Appendix B.

DEVELOPMENT OF AN EMERGENCY PREPAREDNESS RESOURCE MANUAL FOR EDUCATORS

Funding limitations and a reduction in staff prevented the completion of a comprehensive resource manual. A draft manual initially was prepared for use with the grades K-6 study guides. In 1977 the manual was revised to incorporate information required to support the grades 7-9 study guide. After completion of the field test during the 1977-78 school year, evaluation determined that a more comprehensive reference was needed. Essentially while the revised manual is a general reference, it does not provide sufficient in-depth information necessary for instructional preparation. As a result, additional research by the teacher is necessary. Since the revised manual was

designed for grades K-9, the utility of the manual for grades 10-12 must also be considered.

To support the entire K-12 education program, an expanded resource manual is planned. Topics which should be addressed are: (1) concepts of need for emergency preparedness; (2) the nature of and protective measures for natural and man-made disasters and emergencies; (3) the role of government in emergency management; (4) private organizations involved in emergency preparedness; (5) emergency preparedness in the school; (6) the home and emergency preparedness; and (7) behavior of people and society in disaster.

PROGRAM EVALUATION

It is the consensus of the teachers who participated in the development of this program that emergency preparedness instruction can be satisfactorily integrated into the curricula for all grade levels. The emergency preparedness objectives and activities are useful in reinforcing multiple classroom content areas, but seem to be most easily applied to the areas of science, social studies, and health. However, it is the opinion of the participating teachers that emergency preparedness instruction can also be effectively related to language and cultural arts, math, and occupational instruction.

Teachers reported that emergency preparedness concepts, objectives and activities were easily used in the classroom and received with high student interest. Most disasters can be related to the students' community experiences and linked with the world they endeavor to understand. Teachers in grades kindergarten through six expressed some reservations and difficulties in applying the subject of nuclear disasters and radiological emergencies in their classrooms. Some students, especially the younger ones, were frightened by the subject and had difficulty understanding the complex nature of nuclear matter.

The need for emergency preparedness education is recognized by many educators. In this project, experience has shown that emergency preparedness education is compatible with and readily integrated into elementary and secondary education. The educators who participated in developing, testing, and evaluating this program report that the program is useful in reinforcing regular school curricula.

VII. CONCLUSIONS

The results and findings of the project's efforts lead to several conclusions. Experience has shown that the concepts of emergency preparedness education are compatible with and readily integrated into elementary and secondary school education. These concepts include the knowledge, attitudes and skills needed for protection and survival in emergency or disaster situations. This education helps to reinforce elementary and secondary school curricula. Our findings have determined that emergency preparedness education is particularly adaptable for reinforcement of educational curricula in the major content areas of language arts, science, social studies and healthful living education. The need for emergency preparedness education is recognized by many educators. This was evidenced by the interest in the program expressed by the North Carolina Department of Public Instruction, school administrators, and teachers throughout the state. Obtaining agreement from teachers to participate in the program was not difficult.

The study guide approach used in the emergency preparedness education program provides the flexibility necessary to allow for differences in curricula, school organization, teachers' preferences, and individual classroom needs. The employment of teachers to assist in the development of the study guide objectives and learning experiences has enhanced production of a sound educational framework. The teachers helped to insure that the learning activities were educationally feasible and that proper sequence and learning progression were taken into account.

Two implications are deduced from the efforts of this project: First, an emergency preparedness program for grades kindergarten through twelve has great potential for the enhancement of emergency readiness throughout the United States. In face of emergency or disaster, people would be better able to provide for themselves and to assist others. Certainly the emergency preparedness posture of the United States would be enhanced. Second, the emergency preparedness educational program could help reinforce development of positive attitudes toward responsible citizenship and community participation.

VIII. DIFFUSION OF THE EMERGENCY PREPAREDNESS EDUCATIONAL PROGRAM

How should the emergency preparedness educational program be implemented and sustained in a state educational system? This could be accomplished through several possible methods. First, the prototype study guides and instructional aids could be turned over to the responsible state department of education for final production and program implementation. Ideally, if this were done, the emergency preparedness program would become part of the total responsibility of that state educational programs. A second approach would be for the Federal Emergency Management Agency to produce all program materials and coordinate program implementation either through the State departments of education or directly through state Emergency Management channels.

The diffusion of this program was the subject of a conference for educators and state Emergency Management representatives from seven states in FEMA Region IV. The purpose of the meeting was to review the instructional materials and explore possibilities for implementing the program. Several conclusions and recommendations were made by the participants.

To insure acceptance and promotion of the program within the education community, implementation should be primarily through educational channels. The diffusion model must be flexible and allow for individual state educational organization, structure, and emphasis. It was the consensus of the conference participants that federal funding for such a program would be necessary. Finally, a pilot test in several states would be useful for evaluating the program, materials, and implementation models.

To implement the emergency management education program, orientation and training for educators will need to be considered. During the development of this program, there was little difficulty in gaining acceptance from teachers and administrators. Many had already recognized the need for such a program. Most readily accepted participation once they were assured the program had been endorsed by the North Carolina Department of Public Instruction.

As stated earlier, school administrators are concerned with the practical problem of school emergency plans. Logically, assistance for school emergency planning rendered by local Emergency Management Coordinators should also be related to the emergency preparedness education program at the school. Project

experience has shown that the local coordinators provide needed support and assistance.

In summary, the diffusion and implementation of the emergency preparedness education program will require cooperation between educators and the Emergency Management community. Ideally, a strong program can be achieved through the joint efforts of school administrators, teachers, and Emergency Management officials on all levels.

APPENDIXES

APPENDIX A
PROGRAM EVALUATION QUESTIONNAIRE

Research and Development Project
for Civil Preparedness Education Program
for Grades K through 9

Program Evaluation

(Name "optional")	(School)
(Grade Level(s))	(Address)
(Subject Area(s))	(City) (Zip)

1. How effective have the study guide objectives and activity sheets been in the following content areas?

	Very Effective	Somewhat Effective	Not Effective	Not Applicable to my Situation
Language Arts				
Math				
Science				
Social Studies				
Health				
Cultural Arts				
Occupational				

2. Some CP objectives are more easily applied to specific content areas than others. Please list specific examples of these objectives and indicate if they were easy to apply (1), difficult to apply (2), or not applicable to your classroom (3).

CP Objective	Related Content Area	Applicability (Circle One)		
		1	2	3
		1	2	3
		1	2	3
		1	2	3
		1	2	3
		1	2	3
		1	2	3

3. Ideally, the CP objectives are suitable for reinforcing regular classroom content areas. Did you relate the CP objectives to other areas of instruction in your classroom?

_____ Yes, How? _____

_____ No, Why? _____

4. Was the study guide useful in reinforcing other content areas?

_____ Yes

_____ Somewhat

_____ No

5. The study guide suggested specific learning activities for the CP program. Briefly describe any additional activities which you designed or created for this.

6. Various resources such as films, reference materials, brochures and posters have proven useful in classroom instruction. List the types of media or instructional aids you have used most frequently in the CP program.

7. Which types of media or aids were most effective. Please list in order of preference and explain why.

8. Of the CP media materials available, what improvements are needed?

9. Currently we are developing additional media materials. In order of preference list the types of media that a CP media kit for your grade level(s) should contain.

10. Please check the most prevalent reaction of your students to the CP program.

_____ Highly interested _____ Slightly interested _____ Frightened
_____ Moderately interested _____ Bored _____ Indifferent

11. How helpful was the CP Resource Manual?

_____ Very _____ Somewhat _____ Not at all

12. Can the CP study guide be satisfactorily integrated into your curriculum?

_____ Yes

_____ No; Why? _____

13. What suggestions can you make for improving CP integration into your curriculum.

APPENDIX B
SAMPLE ACTIVITY SHEETS
K-12 TEACHER'S MANUAL

EMERGENCY NUMBERS

Rescue Squad

Doctor



Hospital

Fire



Police

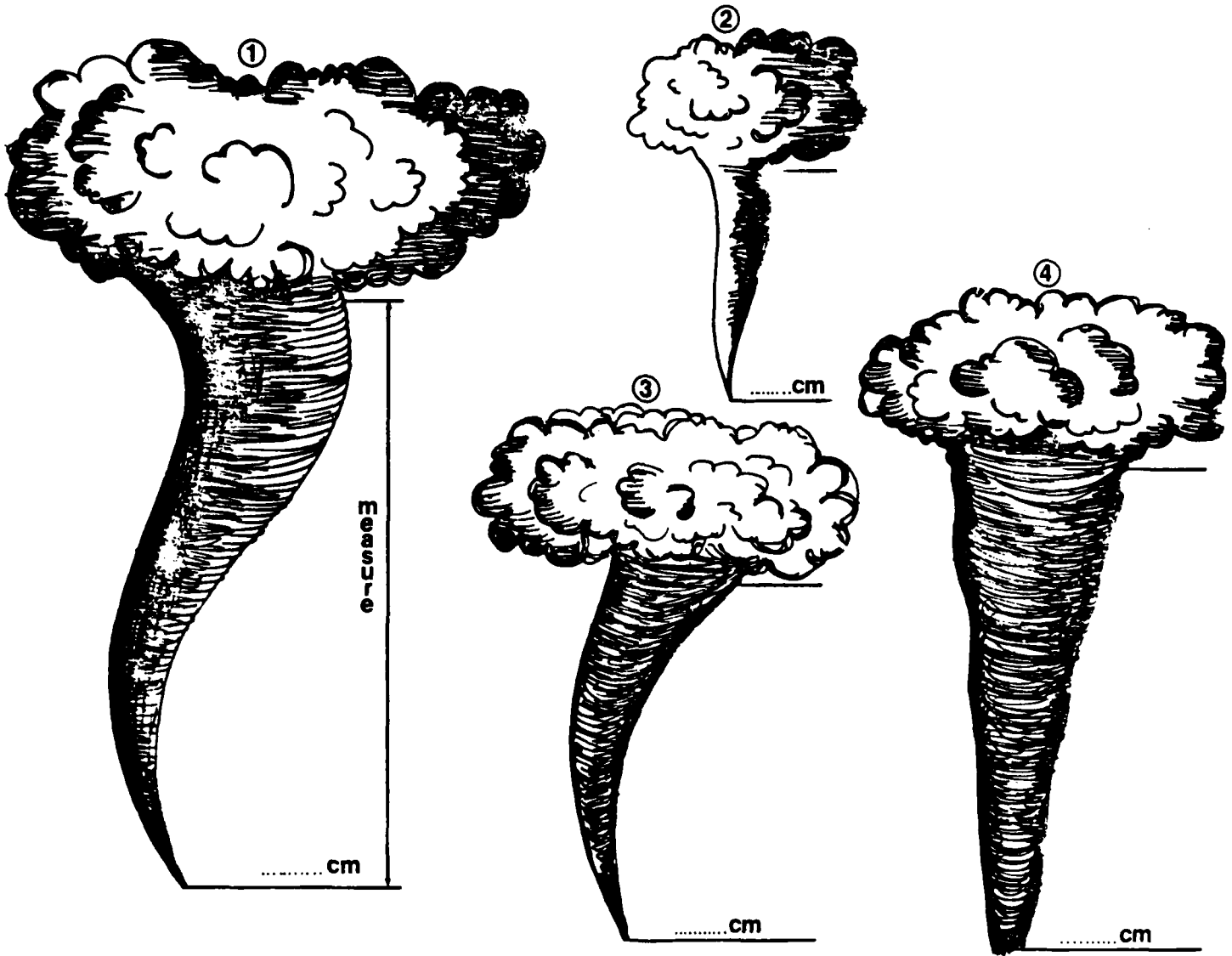
Sheriff



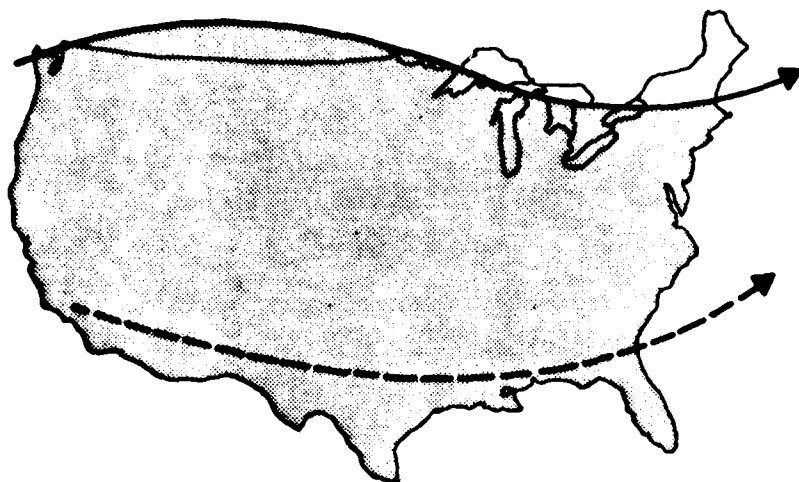
Emergency Management

FEROCIOUS FUNNELS

Directions: Measure each funnel below in centimeters and record your answer beneath each diagram. In the space provided at the bottom of the page, write your own description of a tornado and the damage it will cause.

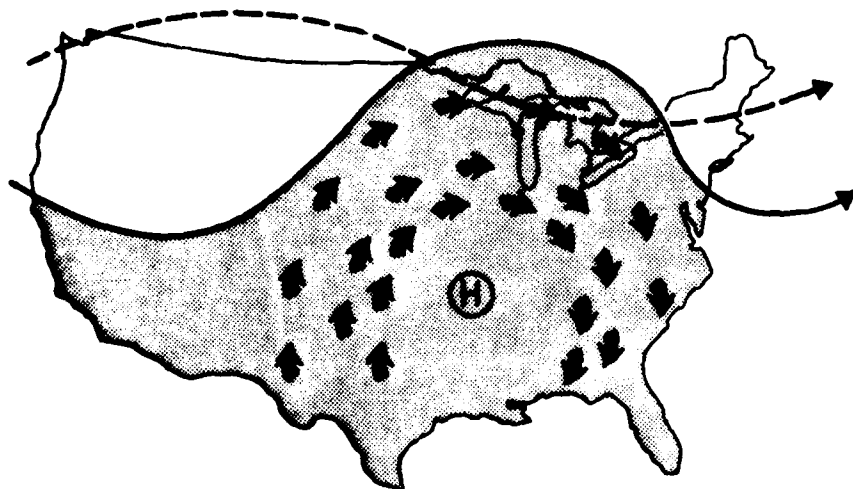
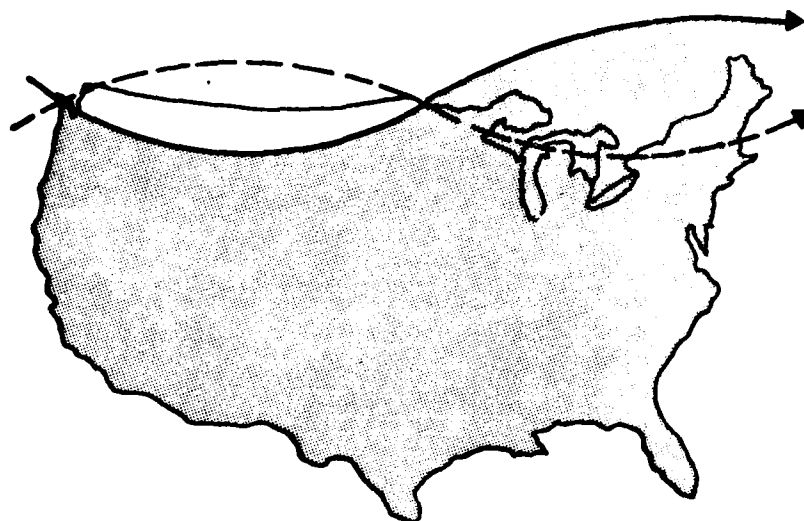


DESCRIPTION OF A TORNADO



Normal summer position of
jet stream & polar front

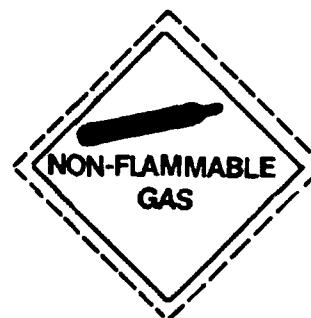
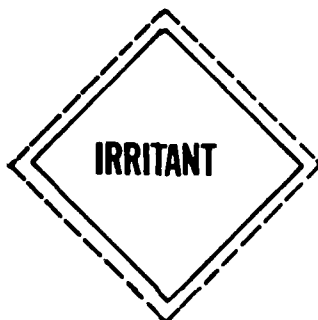
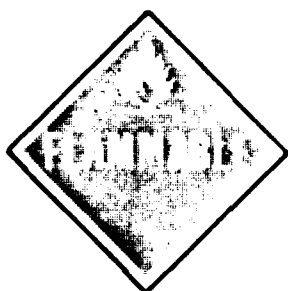
Displaced jet stream



Jet stream blocked northward

"In summer, the jet stream can be an ill wind indeed." Explain

Hazardous Materials Warning Labels



BIBLIOGRAPHY

- Ackerman, J. Mark. Operant Conditioning Techniques for the Classroom Teacher. Glenview, Illinois: Scott, Foresman, 1972.
- American Association of School Administrators. A Realistic Approach to Civil Defense, A Handbook for School Administrators. Washington, D. C.: National Education Association, 1966.
- Anderson, Dan W., J. B. Macdonald, and F. B. May. Strategies of Curriculum Development. Columbus, Ohio: Charles E. Merrill Books, Inc., 1965.
- Baker, Eva L., and Popham, W. James. Expanding Dimensions of Instructional Objectives. Englewood Cliffs, N. J.: Prentice-Hall, 1973.
- Baker, R. L. and R. E. Schutz, eds. Instructional Product Development. New York: Van Nostrand Reinhold Company, 1971.
- Bandura, Albert. Social Learning Theory. Englewood Cliffs, N. J.: Prentice Hall, 1977.
- Bandt, Phillip L. A Time to Learn: A Guide to Academic and Personal Effectiveness. New York: Holt, Rhinehart and Winston, 1974.
- Bartel, Carl R. Instructional Analysis and Materials Development. Chicago: American Technical Society, 1976.
- Belcher, Duane M. Giving Psychology Away. San Francisco: Canfield Press, 1973.
- Berry, Dorothea M. A Bibliographic Guide to Educational Research. Metuchen, New Jersey: Scarecrow Press, 1975.
- Bigge, Morris L. Learning Theories for Teachers. New York: Harper and Row, 1964.
- Billett, Roy Oren. Improving the Secondary-School Curriculum: A Guide to Effective Curriculum Planning. Teachers Practical Press, by Atherton Press, 1970.
- Bixby, Louis W. The Excitement of Learning, the Boredom of Education. Roslyn Heights, N. Y.: Libra Publishers, 1977.
- Bloom, Benjamin Samuel. Taxonomy of Educational Objectives. New York: David McKay Company, 1956.

- Cole, Luella. Psychology of the Elementary School Subjects. New York: Farrar and Rinehart, 1934.
- Crary, Ryland Wesley. Humanizing the School: Curriculum Development and Theory. New York: Knopf, 1969.
- Crow, Lester Donald, ed. Readings in Human Learning. New York: D. McKay Co, 1963.
- Cunningham, Joseph William. Ergometrics: A Systematic Approach to Some Educational Problems. Raleigh: Center for Occupational Education, N. C. S. U., 1971.
- Curtis, Thomas E., and Bidwell, Wilma W. Curriculum and Instruction for Emerging Adolescents. Reading, Mass.: Wesley Pub. Co., 1977.
- Dale, Edgar. Building A Learning Environment. Bloomington, Ill.: Educational Foundation, 1972.
- Davies, Ivor Kevin. Competency Based Learning: Technology, Management, and Design. New York: McGraw-Hill, 1973.
- _____. Objectives in Curriculum Design. London; New York: McGraw-Hill, 1976.
- Davis, Robert Harlan; Alexander, Lawrence T.; and Yelon, Stephen L. Learning System Design: An Approach to the Improvement of Instruction. New York: McGraw-Hill, 1974.
- Defense Civil Preparedness Agency. Government in Emergency, MP-56. Washington, D. C.: Defense Civil Preparedness Agency, 1974.
- _____. Games That Teach, MP-59. Washington, D. C.: Defense Civil Preparedness Agency, 1975.
- _____. Standards for Civil Preparedness, Summary for Public Officials, CPG1-4. Washington, D. C.: Defense Civil Preparedness Agency, 1978.
- Dember, William N., and Jenkins, James J. General Psychology: Modeling Behavior and Experience. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1970.
- Dewey, John. Experience and Education. New York: The Macmillan Co., 1938.
- Engle, Shirley H., and Longstreet, Wilma S. A Design for Social Education in the Open Curriculum. New York: Harper and Rowe, 1972.

Far West Laboratory for Educational Research and Development. Your Chance to Live. Washington, D. C.: Defense Civil Preparedness Agency, 1972.

French, Will. Behavioral Goals of General Education in High School. New York: Russell Sage Foundation, 1957.

Gagne, Robert Mills. Essentials of Learning for Instruction. Hinsdale, Ill.: Dryden Press, 1975.

_____. The Conditions of Learning, 3rd ed. New York: Holt, Rinehart and Winston, 1977.

Gagne, Robert Mills, and Briggs, Leslie J. Principles of Instructional Design. New York: Holt, Rinehart and Winston, 1974.

Garrett, R. L. Civil Defense and the Public, Washington, D. C.: Office of Civil Defense, Office of the Secretary of the Army, 1971.

Garrison, Karl C.; Kingston, Albert J.; and McDonald, Arthur S. Educational Psychology, 2nd ed. New York: Appleton-Century-Crofts, 1964.

Gerhard, Muriel. Effective Teaching Strategies with the Behavioral Outcomes Approach. West Nyack, N. Y.: Parker Publishing Co., 1971.

Gorman, Richard M. Discovering Piaget; A Guide for Teachers. Columbus, Ohio: Merrill, 1972.

Gorow, Frank F. The Learning Game: Strategies for Secondary Teachers. Columbus, Ohio: C. E. Merrill Pub. Co., 1972.

Gow, Doris T. Design and Development of Curricular Materials. Pittsburgh: University Center for International Studies, University of Pittsburg, 1976.

Grobman, Hulda Gross. Developmental Curriculum Projects: Decision Points and Processes. Itasca, Ill.: F. E. Peacock, 1970.

_____. Evaluation Activities of Curriculum Projects: A Starting Point. Chicago: Rand McNally, 1968.

Harris, Alan; Lawn, Martin; and Prescott, William, eds. Curriculum Innovation: (readings). New York: Wiley, 1975.

Hergenhahn, B. R. An Introduction to Theories of Learning. Englewood Cliffs: Prentice-Hall, 1976.

Heller, Robert W., and Rosenthal, Alice M., eds. The Child and the Articulated Curriculum. Danville, Ill.: Interstate Printers and Publishers, 1968.

Hendricks, Gay. The Centering Book: Awareness Activities for Children, Parents, and Teachers. Englewood Cliffs, N. J.: Prentice-Hall, 1975.

_____. The Second Centering Book: More Awareness Activities for Children, Parents, and Teachers. Englewood Cliffs, N. J.: Prentice-Hall, 1977.

Hilgard, Ernest Ropiequet. Theories of Learning. Englewood Cliffs: Prentice-Hall, 1975.

Hirst, Paul H. Knowledge and the Curriculum: A Collection of Philosophical Papers. London; Boston: Routledge and K. Paul, 1975.

Hoetker, James; Fichtenau; and Farr, Helen L. K. Systems, Systems Approaches and the Teacher. Urbana, Ill.: National Council of Teachers of English, 1972.

Holland, James G., et al. The Analysis of Behavior in Planning Instruction. Reading, Mass.: Addison-Wesley Publishing Co., 1976.

Hosford, Philip L. An Instructional Theory: A Beginning. Englewood Cliffs, N. J.: Prentice-Hall, 1973.

Hudgins, Bryce Byrne. The Instructional Process. Chicago: Rand McNally, 1971.

Hug, William E. Instructional Design and the Media Program. Chicago: American Library Association, 1975.

Hutchins, C. L.; Mitchell, K.; and Turnbull, B. A Study of Alternatives for Disseminating Knowledge and Planning for Civil Defense Education Among School Age Children. San Francisco: Far West Laboratory for Education Research and Development, 1972.

Ilg, Frances L., and Ames, Louise Bates. Child Behavior. New York: Harper and Row, 1955.

Kapfer, Miriam B. Behavioral Objectives in Curriculum Development: Selected Readings and Bibliography. Englewood Cliffs, N. J.: Educational Technical Publications, 1972.

- Kelly, Albert Victor. The Curriculum: Theory and Practice. London; New York: Harper and Row, 1977.
- Kentucky Department of Education. Disaster Preparedness: An Elementary Curriculum Guide. Frankfort, Kentucky: Kentucky Department of Education, 1975.
- Kibler, Robert J.; Barker, Larry L.; and Miles, David T. Behavioral Objectives and Instruction. Boston: Allyn and Bacon, 1970.
- Klein, M. Francis. About Learning Materials. Washington, D. C.: Association for Supervision and Curriculum Development, 1978.
- Lawler, Marcella R., ed. Strategies for Planned Curricular Innovation. New York: Teachers College Press, 1970.
- Leeper, Robert R., ed. Association of Supervision and Curriculum Development. Washington, D. C., 1968.
- Lindgren, Henry Clay. Educational Psychology in the Classroom, 5th ed. New York: John Wiley & Son, Inc., 1976.
- Linskie, Rosella. The Learning Process: Theory and Practice. New York: D. Van Nostrand Co., 1977.
- Long, Huey B. The Psychology of Aging: How It Affects Learning. Englewood Cliffs, N. J.: Prentice-Hall, 1972.
- Louisiana State Department of Education. Emergency Preparedness Curriculum Guide. Baton Rouge, Louisiana: Louisiana State Department of Education, 1974.
- Macdonald, James B.; Andersen, Dan W.; and May, Frank B., eds. Strategies of Curriculum Development. Columbus, Ohio: Charles E. Merrill Books, 1965.
- McNeil, John D. Curriculum: A Comprehensive Introduction. Boston: Little, Brown, 1977.
- Marien, Michael D. Alternative Futures for Learning: An Annotated Bibliography of Trends, Forecasts, and Proposals. Syracuse, N. Y.: Educational Policy Research Center, Syracuse University Research Corp., 1971.
- Martorella, Peter H. Concept Learning; Designs for Instruction. Scranton: Intext Educational Publishers, 1972.
- Meeker, Mary Nacol. The Structure of the Intellect; Its Interpretation and Uses. Columbus, Ohio: Merrill, 1969.

- Merrill, M. David, ed. Instructional Design: Readings. Englewood Cliffs, N. J.: Prentice-Hall, 1971.
- Miel, Alice, et al. Cooperative Procedures in Learning. Westport, Conn.: Greenwood Press, 1972.
- Milhollen, Frank and B. E. Forisha. From Skinner to Rogers Contrasting Approaches to Education. Lincoln, Nebraska: Professional Educators Publications, Inc., 1972.
- Miller, John P. Humanizing the Classroom: Models of Teaching in Affective Education. New York: Praeger, 1976.
- Niblett, William Roy, ed. How and Why Do We Learn? London: Faber and Faber, 1965.
- Noar, Gertrude. Individualized Instruction: Every Child a Winner. New York: John Wiley and Sons, Inc., 1972.
- North Carolina Department of Public Instruction. Curriculum Perspectives, Relationships, Trends. Raleigh, North Carolina, 1973.
- _____. Course of Study for Elementary and Secondary Schools K-12. Raleigh, North Carolina, 1977.
- Office of Education, U. S. Department of Health, Education, and Welfare. Education for National Survival. Washington, D. C.: U. S. Department of Health, Education, and Welfare, 1955.
- Olson, Allan L. Strategies for Implementation of Competency Based Education Models. Salem, Ore.: Oregon Competency Based Education Program, Northwest Regional Educ. Lab., 1976.
- Loomis, Charles P. Social Systems: Essays on Their Persistence and Change. Princeton, N. J.: D. VanNostrand Co., Inc., 1960.
- Pierce, Walter, and Lorber, Michael. Objectives and Methods for Secondary Teaching. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1977.
- Pinar, William, Ed. Curriculum Theorizing: The Reconceptualists. Berkeley, Ca.: McCutchan Pub. Corp., 1975.
- Popham, W. James, and Baker, Eva L. Establishing Instructional Goals. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1970.

- Popham, W. James, et al. Instructional Objectives. Chicago: Rand McNally, 1969.
- Ragan, William B.; Wilson, John H.; and Ragan, Tillman J. Teaching in the New Elementary School. New York: Holt, Rinehart and Winston, Inc., 1972.
- Rebelsky, Freda, and Dorman, Lynn. Child Development and Behavior. New York: Alfred A. Knopf, Inc., 1970.
- Reese, Haynewaring. Basic Learning Processes in Childhood. New York: Holt, Rinehart and Winston, 1976.
- Renner, John W. Research, Teaching, and Learning with the Piaget Model. Norman: Univ. of Oklahoma Press, 1976.
- Rogers, Dorothy. Child Psychology. Belmont, Ca.: Brooks/Cole Publishing Co., 1969.
- Rowntree, Derek. Educational Technology in Curriculum Development. London; New York: Harper and Row, 1974.
- Rubin, Louis J. Curriculum Handbook. Boston: Allyn and Bacon, 1977.
- Russel, James D. Modular Instruction; A Guide to the Design, Selection, Utilization, and Evaluation of Modular Materials. Minneapolis: Burgess Publishing Co., 1974.
- Schwab, Joseph Jackson. The Practical: A Language for Curriculum. Washington: National Education Association, Center for the Study of Instruction, 1970.
- Schwartz, Fred, and Schiller, Peter H. A Psychoanalytic Model of Attention and Learning. New York: International Press, 1970.
- Skeel, Dorothy J., and Hagen, Owen A. The Process of Curriculum Change. Pacific Palisades, Ca.: Goodyear Pub. Co., 1971.
- State of Alabama Department of Education. The Challenge of Survival. Bulletin No. 12. Montgomery, Alabama: State of Alabama, 1972.
- Steeves, Frank L. Readings in the Methods of Education. New York: Odyssey Press, 1964.
- Stiles, Lindley J., ed. Theories for Teaching. New York: Dodd, Mead and Co., 1974.

- Popham, W. James, et al. Instructional Objectives. Chicago: Rand McNally, 1969.
- Ragan, William B.; Wilson, John H.; and Ragan, Tillman J. Teaching in the New Elementary School. New York: Holt, Rinehart and Winston, Inc., 1972.
- Rebelsky, Freda, and Dorman, Lynn. Child Development and Behavior. New York: Alfred A. Knopf, Inc., 1970.
- Reese, Haynewaring. Basic Learning Processes in Childhood. New York: Holt, Rinehart and Winston, 1976.
- Renner, John W. Research, Teaching, and Learning with the Piaget Model. Norman: Univ. of Oklahoma Press, 1976.
- Rogers, Dorothy. Child Psychology. Belmont, Ca.: Brooks/Cole Publishing Co., 1969.
- Rowntree, Derek. Educational Technology in Curriculum Development. London; New York: Harper and Row, 1974.
- Rubin, Louis J. Curriculum Handbook. Boston: Allyn and Bacon, 1977.
- Russel, James D. Modular Instruction; A Guide to the Design, Selection, Utilization, and Evaluation of Modular Materials. Minneapolis: Burgess Publishing Co., 1974.
- Schwab, Joseph Jackson. The Practical: A Language for Curriculum. Washington: National Education Association, Center for the Study of Instruction, 1970.
- Schwartz, Fred, and Schiller, Peter H. A Psychoanalytic Model of Attention and Learning. New York: International Press, 1970.
- Skeel, Dorothy J., and Hagen, Owen A. The Process of Curriculum Change. Pacific Palisades, Ca.: Goodyear Pub. Co., 1971.
- State of Alabama Department of Education. The Challenge of Survival. Bulletin No. 12. Montgomery, Alabama: State of Alabama, 1972.
- Steeves, Frank L. Readings in the Methods of Education. New York: Odyssey Press, 1964.
- Stiles, Lindley J., ed. Theories for Teaching. New York: Dodd, Mead and Co., 1974.

- Tanner, Daniel, and Tanner, Laurel N. Curriculum Development: Theory into Practice. New York: Macmillan Publishing Co., 1975.
- Trump, J. Lloyd, and Miller, Delmas F. Secondary School Curriculum Improvement: Proposals and Procedures. Boston: Allyn and Bacon, 1968.
- Unruh, Glenys G. Responsive Curriculum Development: Theory and Action. Berkeley, Ca.: McCutchan Publishing Corp., 1975.
- Vargas, Julie S. Writing Worthwhile Behavioral Objectives. New York: Harper and Row, 1972.
- Warwick, David William. Curriculum Structure and Design. London: University of London Press, 1975.
- Wynne, John P. Theories of Education: An Introduction to the Foundations of Education. New York: Harper and Row, 1963.

DISTRIBUTION LIST

<u>ORGANIZATION</u>	<u>No. copies</u>	<u>ORGANIZATION</u>	<u>No. copies</u>
Federal Emergency Management Agency Mitigation and Research ATTN: Administrative Officer Washington, D.C. 20472	60	Los Alamos Scientific Laboratory ATTN: Document Library Los Alamos, N.M. 87544	1
Assistant Secretary of the Army (R&D) ATTN: Assistant for Research Washington, D.C. 20301	1	The RAND Corporation ATTN: Document Library 1700 Main Street Santa Monica, CA 90401	1
Chief of Naval Research Washington, D.C. 20306	1	Dr. Bala Banathy Far West Laboratories Research and Development 1855 Folsome Street San Francisco, CA 94103	1
Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	12	Dr. John C. Christianson Sociology Department Brigham Young University Provo, UT 84602	1
Mr. Phillip M. Smith Associate Director, Natural Resources & Commercial Services Office of Science and Technology Policy Executive Office Bldg. Washington, D. C. 20500	1	Mr. Charles Turner Emergency Management Institute Business Route 151 Emmitsburgh, MD 21727	4
Oak Ridge National Laboratory ATTN: Librarian P.O. Box X Oak Ridge, Tennessee 37830	1	Mr. Norman E. Leafe North Carolina Department of Public Instruction 114 W. Edenton Street Raleigh, NC 27611	2

Unclassified

Emergency Preparedness Education Program for Public Schools, Division of Emergency Management, North Carolina Department of Crime Control and Public Safety, Raleigh: North Carolina, 1980, 41 pages, (Contract No. DCPA01-78-C-0159, Work Unit No. 4432-D).

Summary

This study reports on the development of an emergency preparedness educational program for integration into elementary and secondary school curricula. Designed to supplement existing curricula in grades kindergarten through twelve, this program addressed such areas as: (1) the nature of and protective measures for natural and man-made disasters including nuclear attack, (2) environmental problems and emergencies, (3) concepts of disaster preparedness and emergency management, (4) individual responsibilities as a citizen in the community, and (5) public and private organizations involved in emergency preparedness.

Based on their classroom use of the materials, teachers participating in the project indicated that the emergency preparedness program is compatible with K-12 curricula. They also reported that the program was particularly adaptable with the language arts, social studies, science, and healthful living curriculum content areas. Teachers in grades K-6 expressed difficulty in dealing with nuclear disaster instruction, while teachers in grades 7-12 indicated that nuclear instruction was readily integrated into the secondary curriculum content areas.

Unclassified

Emergency Preparedness Education Program for Public Schools, Division of Emergency Management, North Carolina Department of Crime Control and Public Safety, Raleigh: North Carolina, 1980, 41 pages, (Contract No. DCPA01-78-C-0159, Work Unit No. 4432-D).

Summary

This study reports on the development of an emergency preparedness educational program for integration into elementary and secondary school curricula. Designed to supplement existing curricula in grades kindergarten through twelve, this program addressed such areas as: (1) the nature of and protective measures for natural and man-made disasters including nuclear attack, (2) environmental problems and emergencies, (3) concepts of disaster preparedness and emergency management, (4) individual responsibilities as a citizen in the community, and (5) public and private organizations involved in emergency preparedness.

Based on their classroom use of the materials, teachers participating in the project indicated that the emergency preparedness program is compatible with K-12 curricula. They also reported that the program was particularly adaptable with the language arts, social studies, science, and healthful living curriculum content areas. Teachers in grades K-6 expressed difficulty in dealing with nuclear disaster instruction, while teachers in grades 7-12 indicated that nuclear instruction was readily integrated into the secondary curriculum content areas.

Unclassified

Emergency Preparedness Education Program for Public Schools, Division of Emergency Management, North Carolina Department of Crime Control and Public Safety, Raleigh: North Carolina, 1980, 41 pages, (Contract No. DCPA01-78-C-0159, Work Unit No. 4432-D).

Summary

This study reports on the development of an emergency preparedness educational program for integration into elementary and secondary school curricula. Designed to supplement existing curricula in grades kindergarten through twelve, this program addressed such areas as: (1) the nature of and protective measures for natural and man-made disasters including nuclear attack, (2) environmental problems and emergencies, (3) concepts of disaster preparedness and emergency management, (4) individual responsibilities as a citizen in the community, and (5) public and private organizations involved in emergency preparedness.

Based on their classroom use of the materials, teachers participating in the project indicated that the emergency preparedness program is compatible with K-12 curricula. They also reported that the program was particularly adaptable with the language arts, social studies, science, and healthful living curriculum content areas. Teachers in grades K-6 expressed difficulty in dealing with nuclear disaster instruction, while teachers in grades 7-12 indicated that nuclear instruction was readily integrated into the secondary curriculum content areas.

Unclassified

Emergency Preparedness Education Program for Public Schools, Division of Emergency Management, North Carolina Department of Crime Control and Public Safety, Raleigh: North Carolina, 1980, 41 pages, (Contract No. DCPA01-78-C-0159, Work Unit No. 4432-D).

Summary

This study reports on the development of an emergency preparedness educational program for integration into elementary and secondary school curricula. Designed to supplement existing curricula in grades kindergarten through twelve, this program addressed such areas as: (1) the nature of and protective measures for natural and man-made disasters including nuclear attack, (2) environmental problems and emergencies, (3) concepts of disaster preparedness and emergency management, (4) individual responsibilities as a citizen in the community, and (5) public and private organizations involved in emergency preparedness.

Based on their classroom use of the materials, teachers participating in the project indicated that the emergency preparedness program is compatible with K-12 curricula. They also reported that the program was particularly adaptable with the language arts, social studies, science, and healthful living curriculum content areas. Teachers in grades K-6 expressed difficulty in dealing with nuclear disaster instruction, while teachers in grades 7-12 indicated that nuclear instruction was readily integrated into the secondary curriculum content areas.